REMARKS

Applicant has amended Claim 1, 4, 5, and 6, cancelled Claims 2, 3, 8, 9 and 10 and added new Claim 14 to more clearly define the invention.

In the aforementioned Office Action, Claims 1 and 6 were rejected under 35 U.S.C. 102(a) as being anticipated by AAPA (Figures 1, and 2, and Page 1, line 12 to page 4, line 14 of the specification. In making that rejection, the Examiner stated:

> Regarding Claim 1, AAPA discloses a liquid crystal display (LCD) device (Figure 1), comprising: a gray signal modulator for receiving gray signals for the input image data (Figure 1, item 10), and for outputting modified gray signals by considering the current and the preceding field image data (Page 3, lines 13-16), or by considering the character of input image data; a data driver (Figure 1, item 12) for converting the modified gray signals into the corresponding data voltages for driving the liquid crystal molecules in each to produce image signal (Page 2, lines 19-20); a gate driver (Figure 1, item 13) for continuously supplying the scanning signals (Page 2, lines 20-21), and a liquid crystal display panel (Figure 1, item 14), comprising a plurality of gate lines (Figure 1, item 15) for transmitting said scanning signals, a plurality of data lines (Figure 1, item 16) being insulated from and crossing the gate lines for transmitting image signals, and an array of pixels forming by the areas surrounded by the said gate lines and said data lines (page 2, lines 21-24).

The Examiner went on to state:

> Regarding Claim 6, AAPA discloses a method for diving a LCD device, comprising inputting gray signals of input image data into a gray signal modulator (Figure 1, item 10); modifying the input gray signals into modified gray signals by the gray signal modulator (Figure 2 and page 2, line 17-18); outputting the modified gray signals to a data driver (Figure 1); converting the modified gray signals into corresponding image data voltages by the data driver (Page 2, lines 19-20), and driving each pixel of the LCD device by the image data voltages, thereby achieving the desired brightness in each pixel of the LCD device (Page 3, lines 4-6).

It is respectfully submitted that amended Claim 1 and amended Claim 6 are clearly and patentably distinguished over the AAPA.

To be more specific conventional gray signal modulators do not consider the problems of noise. Therefore when compensation voltage is amplified, the noise is also enhanced to thereby cause lower image quality. Further, the difference frame-rate systems are not taken into account in the design of a conventional LCD driving method.

The LCD drive in accordance with Claim 1 includes:

an input terminal for receiving the gray signals of input image data;

a frame memory for storing the preceding field image data of the input gray signals;

a controller for controlling the frame memory and the reading and writing processes thereof;

a signal preprocessor for processing the gray signal from the input terminal or detecting the character thereof; the signal preprocessor considering the differences between the current and preceding field image data for reducing the noise induced from the input gray signals, and having further function to cover compensation if the frame rated is varied;

a gray signal data converter for outputting the modified gray signals by considering the gray signals of the preceding field image data transmitted from the frame memory and the outputs from the signal preprocessor, and

an output terminal for transmitting the modified gray signal to the data driver;

Accordingly, it is Applicant's contention that the rejection under 35 U.S.C 102(a) should be withdrawn.

Claim 6 has also been amended to call for:

wherein the method for noise reduction further satisfies

$F_n' = F_n$ if$|F_n - F_{n-1}| \geq N_{th}$,

$F_n' = F_{n-1} + a(F_n - F_{n-1})$,if$|F_n - F_{n-1}| < N_{th}$;

wherein F_n is the current field image data, F_{n-1} is the preceding field image data, F_n' is the modified current field image data, N_{th} is a presetting noise thresholdand a is a presetting parameter, which satisfies $0 \leq a < 1$, or can be changed in accordance with the noise level, satisfying $a = f(F_n, F_{n-1}, N_{th})$.

Accordingly, it is Applicant's contention that he rejection under 35 U.S.C. 102(a) should be withdrawn.

It is respectfully submitted that none of the cited references taken alone or in combination with one another disclose or suggest Applicant's unique combination of elements. For example none of the references disclose or suggest the combination as called for in Claim 6 which now includes the limitation of Claim 10.

15. For example, amended Claim 6 now calls for a method for driving a LCD device, comprising:

inputting gray signals of input image data into a gray signal modulator;

comprising a signal preprocessor, which has function for reducing the noise of input gray signals by considering the difference between the current and the preceding field image data, wherefrom the input gray signal is considered as signal and is outputted directly if the difference exceeds a presettingnoise threshold, otherwise the input gray signal is considered as noise and is outputted after noise reduction modification, and has further function to cover compensation if the frame rate is varied;

modifying the input gray signals into modified gray signals by the gray signal modulator;

outputting the modified gray signals to a data driver;

converting the modified gray signals into corresponding image data voltages by the data

driver, and

driving each pixel of the LCD device by the image data voltages, thereby achieving the desired brightness in each pixel of the LCD device wherein the method for noise reduction further satisfies

$F_n' = F_n$ if$|F_n - F_{n-1}| \geq N_{th}$,

$F_n' = F_{n-1} + a(F_n - F_{n-1})$,if$|F_n - F_{n-1}| < N_{th}$;

wherein F_n is the current field image data, F_{n-1} is the preceding field image data, F_n' is the modified current field image data, N_{th} is a presetting noise threshold and a is a presetting parameter, which satisfies $0 \leq a < 1$, or can be changed in accordance with the noise level, satisfying $a = f(F_n, F_{n-1}, N_{th})$.

It is Applicant's contention that the cited references are not sufficient for one of ordinary skill in the relavent art to combine them in the matter suggested by the Examiner. In fact, what the Examiner has done is to take the elements from four different references and combine them based on the hind-sight of Applicant's disclosure. This is not permissible. As provided in the MPEP Section 2143.01 obviousness can only be established by combining or modifying the teaching of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art and the nature of the problem to be solved as a whole would have been suggested to those of ordinary skill in the art (cites omitted).

In view of the above, it is respectfully submitted that all of the claims in the application are now in proper form and clearly and patentably distinguished over the cited art. Prompt favorable action is requested.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 07-1337. Please credit any overpayment to deposit Account No. 07-1337.

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Respectfully submitted,

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